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|-------------------------------|------------------------|---------------------|--|
| <b>Notice of Allowability</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                               | 10/602,900             | VANN ET AL.         |  |
|                               | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                               | Frank W. Lu            | 1634                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/28/2005, 4/29/2005, 5/13/2005, and 5/20/2005.
2. ☒ The allowed claim(s) is/are 55 and 75-84.
3. ☒ The drawings filed on 23 June 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>5/2005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                       |
|   | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Reasons for Allowance*

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Dion Bregman (Reg. No. 45,645) on May 27, 2005.

2. The application has been amended as follows:

55. (Currently Amended) A method for contacting at least two chemical species, comprising:  
immobilizing a first chemical species on a fiber;  
placing said fiber on a support wherein said fiber is oriented across [a] whole width of a channel formed in said support;

disposing a mobile second chemical species into said channel such that said second chemical species contacts with said immobilized chemical species on said fiber.

76. (Currently Amended) The method of claim 55 further comprising [the] a step of moving said second chemical species along said channel.

77. (Currently Amended ) The method of claim 76 wherein said moving step includes [the] a step of applying electro-osmotic force to said channel.

78. (Currently Amended) A method for analyzing the contact between at least two chemical species, comprising:

immobilizing [an immobilized] a chemical species on at least [a first] one of a plurality of

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optical fibers;

placing said plurality of fibers on a support having a plurality of channels, where each fiber of said plurality of fibers is oriented across [a] whole width of one or more of said channels;

disposing a mobile chemical species having a light-emitting label into at least [a first] one of said plurality of channels such that said mobile chemical species contacts with said at least [said first] one of a plurality of optical fibers;

directing light to an end of said at least [a first] one of a plurality of optical fibers; and

viewing [the] light emitted from said light-emitting label as a result of binding occurring between said immobilized chemical species and said mobile chemical species [at least a first one of a plurality of optical fibers].

80. (Currently Amended) A method for detecting the binding of two chemical species, comprising the steps of:

contacting a mobile first chemical species [mobile] having a light-emitting label within a channel with [an] a second chemical species immobilized on [a] an optical fiber oriented across [a] whole width of the channel;

directing light at an end of said fiber; and

detecting light emitted from said light-emitting label as a result of binding occurring between said first chemical species and said second chemical species.

81. (Currently Amended) The method of claim 80, wherein said detecting step comprises the steps of:

collecting said light emitted from said light-emitting label [the binding] to produce collected light; and

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converting said collected light into an electrical signal that is proportional to said collected light.

82. (Currently Amended) The method of claim 81, wherein said detecting step comprises the step of detecting said light emitted from said light-emitting label [said binding] at a plurality of predetermined locations along said fiber.

84. (Currently Amended) [A] The method according to claim 81, further comprising verifying the chemical composition of said [immobilized] first chemical species or said [one or more mobile] second chemical species.

3. The following is an examiner's statement of reasons for allowance:

Claims 55 and 75-84 are allowable in light of the applicant's amendments filed on March 28, 2005, April 29, 2005, May 13, 2005, and May 20, 2005, the terminal disclaimer filed on April 29, 2005, and the examiner's amendments. Based on applicant's amendments filed on March 28, 2005, April 29, 2005, May 13, 2005, and May 20, 2005, the examiner agrees to combine claims 78-84 with claims 55 and 75-77. The closest prior art in the record is Zolg (US Patent NO. 5,525,463, published on June 11, 1996). This prior art does not teach a fiber which is oriented across whole width of a channel. This prior art either alone or in combination with the other art in the record does not teach or reasonably suggest a method for contacting at least two chemical species, a method for analyzing the contact between at least two chemical species, a method for detecting the binding of two chemical species which comprise all of the limitations recited in claims 55, 78, and 80.

Any comments considered necessary by applicant must be submitted no later than

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the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is (571)273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (571)272-0746.

The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (571)272-0745.

Any inquiry of a general nature or relating to the status of this application should be directed to the Chemical Matrix receptionist whose telephone number is (703) 308-0196.

Frank Lu  
PSA  
May 27, 2005

  


**FRANK LU**  
**PATENT EXAMINER**